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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,818

05/16/2006

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10/05/2009

EXAMINER

NGUYEN, NAM V

ART UNIT

PAPER NUMBER

2612

MAIL DATE

DELIVERY MODE

10/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,818	<b>Applicant(s)</b> LEE, SAM HYEON	
	<b>Examiner</b> Nam V. Nguyen	<b>Art Unit</b> 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2009 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/16/06</u> .                                                 | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The application of Lee for a “device for individual control of multiple circuit-unit using single cable and method thereof” filed November 18, 2004 has been examined.

This application claims foreign priority based on the application 10-2003-0081794 and 10-2003-0081795 filed November 18, 2003 in Korea. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file.

This application claims priority to a 371 of PCT/KR04/02990, which is filed on May 16, 2006.

A preliminary amendment to the claims 2-14 and 16-35 has been entered and made of record.

Claims 21-35 are cancelled.

Claims 1-20 are now pending in the application.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to label boxes (10) in Figures 1 to 3 , 10, 14 and 16 as described in the specification. Any structural detail that is

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essential for a proper understanding of the disclosed invention should be shown in the drawing.

MPEP § 608.02(d).

The drawings are objected to under 37 CFR 1.83(a) because they fail to show Fig 3A as described in the Figure 6. Figure 6 should be label Fig 4 for the graph.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 6, 9-16 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by  
Liu (US# 6,369,699).

Referring to claim 1, Liu discloses a remote device (10) (i.e. a control device) for  
individually controlling plurality of local devices (11) (i.e. a plural of circuit-units) using a single  
cable (14) (column 1 line 60 column to column 2 line 30; see Figures 1 to 7), comprising:

a remote device (10) (i.e. a central unit) for transmitting modulated carrier signals of  
different frequency bands (i.e. frequency signals of different frequency channels) (column 3 lines  
34 to 48; see Figures 1 to 2);

local devices (11) (i.e. the plural circuit-units) each provided with a filter module (16)  
with a band pass filter (23) having a frequency band different from those of any other band pass  
filters provided for the other circuit-units (column 3 line 59 to column 4 line 10; see Figures 1-  
3); and

a single cable (14) connected between the remote device (10) (i.e. the central unit) and  
the local devices (11) (i.e. the plural circuit-units) to transfer the frequency signals from the

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remote device (10) (i.e. the central unit) to the local device (11) (i.e. the plural circuit-units) (column 3 lines 49 to 58; see Figures 1 to 4).

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Referring to Claim 15, Liu discloses a control device for individually controlling plurality circuit-units using a single cable, to the extent as claimed with respect to claim 1 above, and wherein each of the local unit (11) (i.e. the circuit-units) selectively receives a frequency signal and sends signal information concerning a load included therein to the remote unit (10) (i.e. the central unit) (column 4 line 51 to column 5 line 17; see Figure 4).

Referring to claims 6 and 16, Liu discloses the control device as claimed in claims 1 and 15, wherein the single cable (14) comprises a frequency signal output line for outputting a frequency signal, a ground line (not shown), and a return line (75), wherein amongst the frequency channels, the highest frequency channel is transmitted to the return line (75) (column 5 lines 40 to column 6 line 13; see Figures 6-8).

Referring to claims 9-10, Liu discloses the control device as claimed in claim 1, the single cable (14) is connected with an existing power line so that electric power and the frequency signals are transmitted through the power line (column 5 lines 40 to 51; column 5 lines 64 to column 6 line 13; see Figures 6-8).

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Referring to Claims 11-14 and 19-20, Liu discloses the control device as claimed in claims 1, 9 and 15, wherein the remote unit (10) (i.e. the central unit) sends only one frequency value as a frequency signal to be transmitted to a local unit (11) (i.e. a predetermined circuit-

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unit), and then sends the frequency signal to the predetermined circuit-unit (11) using same frequency band feature (i.e. single resonance) only when the frequency value matches with a frequency band of a band pass filter ((23) corresponding to the predetermined circuit-unit (11) (column 4 line 21 to column 5 line 17; see Figures 1-6).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US# 6,369,699) as applied to claim 1 above, and in view of Dolby (US# 3,846,719). Referring to claims 2-3, Liu discloses the control device as claimed in claim 1, however, Liu did not explicitly disclose wherein each of the band passes filters has a voltage threshold circuit and wherein the voltage threshold circuit has a diode section, in which at least one forward diode and at least one reverse diode are connected in parallel to each other.

In the same field of endeavor of filtering system, Dolby teaches that a filter and diode limiter (12) for voltage threshold circuit and the filter and diode limiter (12) includes a diode section, in which at least one forward diode (28) and at least one reverse diode are connected in parallel to each other (column 4 lines 22 to 46; see Figures 1-6) in order to prevent the reduction of noise above certain level. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize having the filter and diode filter including the forward

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¶ Referring to claim 1, Gorecki discloses an application unit (12) (i.e. a control device) for individually controlling peripheral units (10) (i.e. a plural of circuit-units) using a power line (104) (i.e. a single cable) (column 2 lines 10 to 46; column 8 lines 57 to column 9 line 4; see Figures 1 to 8), comprising:¶ A transmitter (16) (i.e. a central unit) for transmitting frequency signals of different frequency channels (column 3 lines 30 to 47; see Figures 1 to 2);¶ peripheral units (10) (i.e. the plural circuit-units) each provided with a band pass filter (50) having a frequency band different from those of any other band pass filters provided for the other circuit-units in a receiver unit (24)(column 5 lines 12 to 43; column 8 lines 57 to column 9 line 21; see Figures 3-4 and 7); and¶ a power line (104) (i.e. a cable) connected between the transmitter (16) (i.e. the central unit) and the peripheral units (10) (i.e. the plural circuit-units) to transfer the frequency signals from the transmitter (16) (i.e. the central unit) to the peripheral units (10) (i.e. the plural circuit-units) (column 5 lines 56 to column 6 line 4; column 8 lines 38 to 44; see Figures 1 and 6).¶

¶ Referring to Claim 15, Gorecki disclose the control device for individually ... [1]

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diode and the reverse diode are connected in parallel to each other taught by Dolby in the frequency discriminator of the receiver of Liu because using the forward diode and the reverse diode are connected in parallel to each other would shift to narrow the pass band when the filter output rises above certain level in the single cable surveillance system.

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2. Claims 4-5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US# 6,369,699), as applied to claims 1 and 15 above, and in view of Vander Mey et al. (US# 5,777,544).

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Referring to claim 4, Liu discloses the control device as claimed in claim 1, however, Liu did not explicitly disclose wherein each of the band pass filters has a detection unit for detecting an AM signal if a signal passing through the corresponding band pass filter is an AM signal.

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In the same field of endeavor of controlling data communications across power lines, Vander Mey teaches that a band pass filters (24) has a detection unit for detecting an AM signal if a signal passing through the corresponding band pass filter is an AM signal (column 6 lines 8 to 14; see Figures 2 and 3) in order to reduce the large amplitude out of band signals.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize having detection unit for detecting an amplitude signal with the band pass filter taught by Vander May in the filter module which receives the modulated carrier signal inputted from the single cable of the surveillance system of Liu because using the detection unit

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for detecting an amplitude signal with the band pass filter would create an alternative digital data transmission format in the filter module for power line carrier data in the surveillance system.

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Referring to claim 5, Liu in view of Vander Mey disclose the control device as claimed in claim 4, Vander Mey discloses wherein the detection unit comprises at least one diode (not shown), which serves as a voltage threshold circuit for providing a voltage threshold value for the corresponding band pass filter (column 6 lines 1 to 14; see Figure 3).

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Referring to claim 18, Liu discloses the control device as claimed in claim 15, wherein each of the circuit-units (10) comprised a tri-state switch (29) (i.e. a switch) (column 6 lines 30 to 39; column 10 lines 11 to 18; see Figures 3 and 4).

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<#>Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorecki (US# 4,556,866) as applied to claims 1 and 15 above, and in view of Schwarzbach et al. (US# 4,418,333).¶

¶ Referring to claims 6 and 16, Gorecki disclose the control device as claimed in claims 1 and 15, however, Gorecki did not explicitly disclose wherein the cable comprises a frequency signal output line for outputting a frequency signal, a ground line, and a return line, wherein amongst the frequency channels, the highest frequency channel is transmitted to the return line.¶

In the same field of endeavor of controlling data communications across power lines, Schwarzbach et al. disclose a three phase AC power line (21) (i.e. a cable) comprises a hot line (i.e. a frequency signal output line for outputting a frequency signal), a ground line, and a neutral line (i.e. a return line), wherein amongst the frequency channels, the highest frequency channel is transmitted to the return line (column 13 lines 57 to 68; column 14 lines 50 to column 15 line 18; see Figures 6 and 8) in order to receive operational status of the slave unit.¶

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize using the three phase AC power line with to communicate with plurality of slave units taught by Schwarzbach et al. in the frequency phase keying protocol of the digital data transmission format through a power line of Gorecki because using the three phase AC power line with to communicate with plurality of slave units would create an alternative digital data transmission communication between the master unit and remote transceivers in the power line carrier data system.¶

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3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US# 6,369,699) as applied to claim 1 above, and in view of Jarvinen (US# 5,406,635).

Referring to claim 7, Liu discloses the control device as claimed in claim 1, however, Liu did not explicitly disclose wherein the central unit divides time into time periods assigned to the different frequency channels and sequentially transmits the frequency signals through the different frequency channels according to the divided time periods.

In the same field of endeavor of controlling data communications across transmission lines, Jarvinen discloses a system divides the signal into a plurality of channels (i.e. the different

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frequency channels) of a predetermined bandwidth, processing the signal sequentially in distinct time periods of a predetermined length (column 3 lines 5 to 44; see Figures 3a to 4c) in order to separate the voice signal and the noise.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize dividing the signal into a plurality of channels of a predetermined bandwidth and processing the signal sequentially in distinct time periods of the predetermined length taught by Jarvinen in the frequency discriminator in the single cable transmission device for signals in the surveillance system of Liu because dividing the signal into a plurality of channels of a predetermined bandwidth and processing the signal sequentially in distinct time periods of the predetermined length would obtain different frequency bands separately to provides good results without noise signal.

1. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US# 6,369,699) as applied to claim 1 above, and in view of Kilian et al. (US# 4,017,845).

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Referring to claim 8, Liu discloses the control device as claimed in claim 1, however, Liu did not explicitly disclose the central unit overlappingly and simultaneously transmits the frequency signals to the plural circuit-units through different frequency channels.

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In the same field of endeavor of controlling data communications across transmission lines, Kilian et al. disclose signal source (i.e. a central unit) simultaneously transmits the frequency signals to remote location receiving units (i.e. plural circuit-units) through different frequency channels (column 1 lines 43 to 56; column 2 lines 1 to 8; see Figure 1) in order to

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provided limited amounts of power to operate equipment which may be used at the receiving end, using relatively short lengths of transmission lines.

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At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize transmitting simultaneously the frequency signal to receiving end taught by Kilian et al. in the single cable transmission device for signals of the surveillance system of Liu because transmitting simultaneously the frequency signal to receiving end would provide signals are transferred from one end of the single cable to the other end with both high frequency signals and the power supply transmission line on the same relative short length single cable.

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2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US# 6,369,699), as applied to claim 15 above, and in view of Johnson et al. (US# 4,057,793).

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Referring to claim 17, Liu discloses the control device as claimed in claim 15, however, Liu did not explicitly disclose wherein each of the circuit-units comprises a 4-probe method circuit.

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In the same field of endeavor of controlling data communications across transmission lines, Johnson et al. disclose circuit-units each of the receiver (Rr) (i.e. the circuit-units) comprises four lines of one common ground line and three phase lines (i.e. a 4-probe method circuit) (column 5 lines 62 to column 6 line 2; see Figures 2 and 5-6) in order to selectively transmitting binary electrical signals from a first location to a second location.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to recognize using four lines in the power lines of an AC distribution network taught by

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Johnson et al. in the single cable transmission device for signals and a power supply of the surveillance system of Liu because using four lines in the power lines of an AC distribution network would provide flexibility in transmitting information between one end of the single cable to the other end with both high frequency signals and the power supply transmission line on the same relative short length single cable in the surveillance system.

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### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujii et al. (US# 3,909,618) disclose a carrier transmission system utilizing commercial power lines as transmission lines.

Abraham (US# 5,625,863) discloses a video distribution system using in-wall wiring.

Mansfield, Jr. et al. (US# 6,822,555) disclose a fire system implemented with power line communications.

Novikov (US# 7,012,518) discloses a dimmer control system with two-way master-remote communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam V. Nguyen whose telephone number is 571-272-3061. The examiner can normally be reached on Mon-Fri, 8:30AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Brian Zimmerman can be reached on 571- 272-3059. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Nam V Nguyen/  
Examiner, Art Unit 2612

/Brian A Zimmerman/  
Supervisory Patent Examiner, Art Unit 2612